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Terms	Documents
l24 or l25	6

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Search:

L26

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Clear

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DATE: Friday, August 30, 2002    [Printable Copy](#)    [Create Case](#)

**Set Name Query**  
 side by side

DB=USPT; PLUR=YES; OP=ADJ

**Hit Count Set Name**  
 result set

<u>L26</u>	l24 or l25	6	<u>L26</u>
<u>L25</u>	('4053681')[PN]	1	<u>L25</u>
<u>L24</u>	('5837415' '6020102' '5703155' '5856407' '5346945')[PN]	5	<u>L24</u>
<u>L23</u>	l11 and l21	132	<u>L23</u>
<u>L22</u>	l11 and l21L21	0	<u>L22</u>
<u>L21</u>	l19 or l20	132	<u>L21</u>
<u>L20</u>	('4054733' '4053681' '4065444' '4031290' '4097569' '3991216'  '3920622' '3591191' '3867481' '4038341' '4077931' '3868359'  '3972962' '3772196' '3917552' '3882078' '3841895' '3854893'  '4097438' '3948666' '3959554' '3919348' '4018250' '3928491'  '3708555' '4016332' '3632393' '3611888' '4100229' '3992338'  '4076766' '3785860' '3855135')[PN] ('5457157' '4254351' '5840809' '5346945' '4654389' '6020455'	33	<u>L20</u>

	'6136901' '4329438' '5051461' '4520088' '5476687' '5614568'		
	'5726227' '4883834' '5506320' '4126739' '6414073' '6147041'		
	'6017670' '4179479' '5106875' '4605721' '6319152' '4173593'		
	'4361669' '6020102' '5981625' '4465811' '6103780' '4259458'		
	'4495324' '4514542' '4652589' '5703155' '5019477' '5276104'		
	'5770760' '5763546' '6337304' '5098950' '5143974' '5856407'		
	'4178327' '5066694' '4287371' '4518764' '5102605' '5098811'		
<u>L19</u>	'5703167' '5684090' '5574100' '4464524' '4139578' '4604221'	99	<u>L19</u>
	'5387486' '5318853' '4743643' '6093760' '5969027' '5874495'		
	'5679490' '6153347' '5264324' '5095054' '5422022' '5773185'		
	'5973054' '6306941' '6040382' '5059632' '5650458' '5278231'		
	'5548027' '4581384' '5670561' '5317059' '5374680' '4535049'		
	'4272619' '5837415' '5149237' '4366280' '5051296' '4857574'		
	'4366289' '5736253' '5274035' '5770655' '5084508' '6162545'		
	'4230813' '6432269' '5973074' '5800873' '4272419' '4235760'		
	'5637783' '5601889' '6022919')[PN]		
<u>L18</u>	l16 and l17	133	<u>L18</u>
<u>L17</u>	acrylic or methacrylic or methacrylate or methlmethacrylate	180496	<u>L17</u>
<u>L16</u>	l14 and L15	186	<u>L16</u>
<u>L15</u>	rubber or rubbery or polybutadiene or elastomer or elastomeric	404638	<u>L15</u>
<u>L14</u>	l11 and l12	548	<u>L14</u>
<u>L13</u>	l11 and l12L12	0	<u>L13</u>
<u>L12</u>	vinylaromatic.ab. or vinyl aromatic.ab. or styrene.ab. or styreneic.ab. or polyvinylaromatic.ab. or polystyrene.ab.	10098	<u>L12</u>
<u>L11</u>	acid value or acid number	21077	<u>L11</u>
<u>L10</u>	('5053456')[PN]	1	<u>L10</u>
<u>L9</u>	164745 or 120734 or 025700	21	<u>L9</u>
<u>L8</u>	62164745 or 60120734 or 62025700	0	<u>L8</u>
<u>L7</u>	jp620164745 or jp600120734 or jp620025700	0	<u>L7</u>
<u>L6</u>	jp62164745 or jp60120734 or jp62025700	0	<u>L6</u>
<i>DB=PGPB; PLUR=YES; OP=ADJ</i>			
<u>L5</u>	l3 and L4	8	<u>L5</u>
<u>L4</u>	impact same styrene	392	<u>L4</u>
<u>L3</u>	acid value	474	<u>L3</u>
<u>L2</u>	L1	0	<u>L2</u>
<i>DB=USPT; PLUR=YES; OP=ADJ</i>			
<u>L1</u>	acid value	8897	<u>L1</u>

END OF SEARCH HISTORY

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS  
 AN 1985:579213 CAPLUS  
 DN 103:179213  
 TI Transparent thermoplastic molding compositions with high heat and impact resistance  
 PA Asahi Chemical Industry Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08L025-02  
 ICS C08L033-12  
 ICA C08F212-06; C08F220-14  
 ICI C08L025-02, C08L051-04  
 CC 37-6 (Plastics Manufacture and Processing)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60120734	A2	19850628	JP 1983-227989	19831202 <--
AB	JP 62025700	B4	19870604		

The title compns. comprise a graft copolymer of butadiene, styrene, and an alkyl methacrylate and a matrix copolymer which is prepd. from (meth)acrylic monomers and styrene and contains 6-membered cyclic acid anhydride groups formed from pendent carboxy groups, the copolymers having similar refractive index values. Thus, a copolymer prepd. from Me methacrylate (I) 37.2, styrene 34.3, and methacrylic acid 8.5 parts and heated in vacuo had softening point 129.degree. and contained residues of Me methacrylate 40, styrene 43, 6-membered cyclic acid anhydride 15, and methacrylic acid 2%. This copolymer (70 parts) and 30 parts graft polymer [25053-09-2] prepd. from 35.5:64.5 styrene-butadiene rubber 60, styrene 20, and I 20% were mixed and injection molded to give a molding which had notched Izod impact strength 5.1 kg-cm/cm, Vicat softening point 122.degree., and light transmittance 88%, lost 5% of its wt. during heating to 376.degree. (at 20.degree./min), and remained transparent during 1 h in water at 100.degree..

ST methacrylic acid copolymer blend; blend methacrylic copolymer rubber; methacrylate copolymer blend; styrene copolymer blend; butadiene copolymer blend; anhydride methacrylic copolymer blend; heat resistance polymer blend; impact strength polymer blend; transparency polymer blend; graft copolymer blend

IT Heat-resistant materials  
 (acrylic polymer-grafted SBR blends, for moldings)

IT Plastics, molded  
 RL: USES (Uses)  
 (acrylic polymer-grafted SBR blends, heat- and impact-resistant, transparent)

IT 25035-81-8D, carboxylic anhydride group-contg.  
 RL: USES (Uses)  
 (blends contg., heat- and impact-resistant, transparent)

IT 25053-09-2  
 RL: USES (Uses)  
 (graft, acrylic polymer blends, heat- and impact-resistant, transparent)

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS  
AN 1988:95482 CAPLUS  
DN 108:95482  
TI Impact- and heat-resistant transparent thermoplastic compositions  
IN Fukuoka, Mamoru; Miura, Yoshikyo  
PA Dainippon Ink and Chemicals, Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM C08L025-08  
ICS C08L025-08; C08L033-02; C08L033-04; C08L051-04  
CC 37-3 (Plastics Manufacture and Processing)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62164745	A2	19870721	JP 1986-6250	19860117 <--
AB	Title compns. comprise 85-10% copolymers having JIS K-6717 light transmission (.tau.) .gtoreq.80% and nD28 .gtoreq. 1.548 prepd. from styrene 75-45, methacrylic acid 20-40, and Me methacrylate (I) 5-25%; 5-80% I copolymers having .tau. .gtoreq. 80%, and 10-40% copolymers having nD28 1.515-1.545 and .tau. .gtoreq. 60% prepd. from 20-80% rubbers grafted with 80-20% 10-90:90:10 I/styrene mixts. or 5-49:90-1:5-50 I/styrene/acrylonitrile mixts. The blends of the first 2 copolymers have nD28 within +/-0.002 that of the graft copolymer. Thus, 1.045 g 54.7% butadiene rubber was added to 1.950 g H2O contg. emulsifier, mixed with I 84, styrene 36, tert-dodecyl mercaptan 0.5, and tris(nonylphenyl) phosphite 4g, then with 100 g H2O contg. 2 g K2S2O8 at 65.degree., and with 196 g I and 84 g styrene at 70.degree. for 4 h, and 80.degree. for 1 h to give a graft copolymer (II) and nD28 1.523 and .tau. 75%. Blending 20 parts II, 38 parts styrene-methacrylic acid-I-.alpha.-methylstyrene dimer copolymer (nD28 1.556, .tau. 88%), and 42 parts Sumipex BMH (I copolymer, .tau. 92%), and molding gave specimens with heat distortion temp. 99.degree., notched Izod impact strength 8.1 kg-cm/cm, .tau. 86%, and no silver streaks; vs. 88.degree., 1.6 kg-cm/cm; 93%, and no silver streaks for a control from Sumipex alone.				
ST	impact resistant thermoplastic polystyrene blend; heat resistant thermoplastic polystyrene blend; transparent thermoplastic polystyrene blend modifier; polyester polymethacrylate blend impact modifier; vinyl grafted rubber impact modifier; polybutadiene vinyl grafted impact modifier				
IT	Heat-resistant materials (styrene copolymer blends with methacrylate polymers and vinyl-grafted rubbers, transparent and impact-resistant)				
IT	Transparent materials (styrene copolymers blends with methacrylate polymers and vinyl-grafted rubbers, heat- and impact-resistant)				
IT	Plastics RL: USES (Uses) (thermo-, styrene copolymer blends with methacrylate polymers and vinyl-grafted rubbers, heat- and impact-resistant, transparent)				
IT	95097-03-3, Methacrylic acidmethyl methacrylate-.alpha.-methylstyrene-styrene copolymer RL: USES (Uses) (blends with methacrylic polymers and vinyl-grafted rubbers, transparent, heat and impact-resistant)				
IT	107080-92-2, Kaneace B56 107592-06-3 RL: USES (Uses) (blends with styrene copolymers and methacrylate polymers, heat- and impact-resistant and transparent)				
IT	107080-92-2, Butadiene-methyl methacrylate-styrene graft copolymer RL: USES (Uses) (blends with styrene copolymers and methacrylic polymers, impact and heat-resistant, transparent)				
IT	107592-06-3 RL: USES (Uses)				

• (blends with styrene copolymers and methacrylic polymers, impact- and heat-resistant, transparent)  
IT 72270-10-1, Sumipex BMH  
RL: USES (Uses)  
(blends with styrene copolymers and vinyl-grafted rubbers, with improved heat- and impact resistance and transparency)

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L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS  
AN 1993:235219 CAPLUS  
DN 118:235219  
TI Thermoplastic blends with good heat and impact resistance  
IN Takahashi, Atsushi; Isobe, Yoshiichi  
PA Denki Kagaku Kogyo K. K., Japan  
SO Jpn. Kokai Tokkyo Koho, 11 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C08L025-04  
ICS C08L033-10  
ICI C08L025-04, C08L051-04  
CC 37-6 (Plastics Manufacture and Processing)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04320441	A2	19921111	JP 1991-113715	19910419 <--
	JP 3025333	B2	20000327		
AB	The title blends comprise 93-99.5 parts copolymers of 70-97% arom. vinyl compds. and/or alkyl methacrylates and 3-30% methacrylic acid (I) and 0.5-7 parts rubbers grafted with vinyl monomers. A 97:3 blend of a 90:10 styrene-I copolymer (II) and a styrene-grafted butadiene rubber gave injection moldings with Vicat softening point 122.degree. and falling-ball impact strength 49.0 cm, vs. 123 and 15.2, resp., for II.				
ST	vinyl graft rubber impact improver; acrylate styrene copolymer impact improver; methacrylic acid styrene copolymer toughness; heat resistance styrene copolymer blend; impact strength styrene copolymer blend				
IT	Heat-resistant materials Impact-resistant materials (methacrylic acid-vinyl compd. copolymer-graft copolymer blends)				
IT	Plastics, molded RL: USES (Uses) (methacrylic acid-vinyl compd. copolymer-graft copolymer blends, heat- and impact-resistant)				
IT	106974-54-3, Butadiene-styrene graft copolymer 107080-92-2, Butadienemethyl methacrylate-styrene graft copolymer 107439-29-2, Butadienemethyl methacrylate graft copolymer RL: USES (Uses) (blends with styrene copolymers, heat- and impact-resistant)				
IT	9010-92-8, Methacrylic acid-styrene copolymer 25035-81-8, Methacrylic acid-methyl methacrylate-styrene copolymer 25086-15-1, Methacrylic acid-methyl methacrylate copolymer RL: USES (Uses) (blends with vinyl compd.-grafted rubber, heat- and impact-resistant)				

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FILE 'DPCI' ENTERED AT 12:53:23 ON 30 AUG 2002

L1 2 S JP6216475/PN OR JP04320441/PN OR JP60120734/PN OR JP61043643/  
L2 3 S JP62016475/PN OR JP04320441/PN OR JP600120734/PN OR JP6104364  
L3 3 S JP62016475/PN OR JP04320441/PN OR JP600120734/PN OR JP6202570  
SEL PN.G

FILE 'CAPLUS' ENTERED AT 12:56:41 ON 30 AUG 2002

L4 7 S E1-E13/PN

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L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS  
AN 1986:479953 CAPLUS  
DN 105:79953  
TI Heat-resistant thermoplastic resin molding compositions  
IN Otani, Ikuji; Ouchi, Kenji; Miura, Junichi  
PA Asahi Chemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM C08L025-08  
ICI C08L025-08, C08L033-12, C08L053-02  
CC 37-6 (Plastics Manufacture and Processing)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61043643	A2	19860303	JP 1984-166008	19840808 <--
	JP 62025699	B4	19870604		
AB	Compns. comprising 70-97:3-30 arom. vinyl compd.-methacrylic acid copolymer 40-98, alkyl acrylate and/or arom. vinyl compd.-Me methacrylate copolymer 1-40, and 60-95:5-40 arom. vinyl compd.-conjugated diene compd. block copolymer 1-20% have good mech strength and transparency and useful in prepg. microwave ovenwares, surgical goods, electronic parts, etc. Thus, a mixt. of 8:92 methacrylic acid-styrene copolymer 71, 1.5:98.5 Me acrylate-Me methacrylate copolymer (I) 19, and 30:70 1,3-butadiene-styrene block copolymer 10 parts was injection molded to give a sheet having Vicat softening point 126.degree., flexural strength 1100 kg/cm2, bending (ASTM D790) >20 mm, no cracking (olive oil-coated), and transparent, vs. 126, 710, 0, some, and opaque, resp., for a sheet without I.				
ST	styrene copolymer blend transparency; methacrylic styrene copolymer blend; heat resistant styrene copolymer blend				
IT	Transparent materials (methacrylic acid-styrene copolymer-Me (meth)acrylate-styrene copolymer-butadiene-styrene block copolymer blends)				
IT	Plastics, molded RL: USES (Uses) (methacrylic acid-styrene copolymer-Me (meth)acrylate-styrene copolymer-butadiene-styrene copolymer blends, transparent and heat-resistant)				
IT	9010-92-8 RL: USES (Uses) (Me (meth)acrylate-styrene copolymer-butadiene-styrene block copolymer blends, transparent and heat-resistant)				
IT	9003-55-8 RL: USES (Uses) (block, methacrylic acid-styrene copolymer-Me (meth)acrylate-styrene copolymer blends, transparent and heat-resistant)				
IT	9011-87-4 25034-86-0 RL: USES (Uses) (methacrylic acid-styrene copolymer-butadiene-styrene block copolymer blends, transparent and heat-resistant)				

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FILE 'CAPLUS' ENTERED AT 10:25:15 ON 30 AUG 2002

FILE 'REGISTRY' ENTERED AT 10:26:10 ON 30 AUG 2002

L1 0 S ACRYLIC ACID AND C2H4O2/MF  
L2 6 S ACRYLIC ACID AND C3H4O2/MF  
L3 1 S 79-10-7  
L4 5 S METHACRYLIC ACID AND C4H6O2/MF  
L5 1 S 79-41-4  
L6 2 S L3 OR L5

FILE 'CAPLUS' ENTERED AT 10:29:02 ON 30 AUG 2002

L7 34057 S L6  
L8 18 S L7(5A)IMPUR?  
L9 12 S L7(5A)PPM  
L10 29 S L8 OR L9  
L11 8 S L10 AND ?POLYMER?  
L12 13 S L8 NOT L11

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 result set

DB=PGPB; PLUR=YES; OP=ADJ

<u>L5</u>	I3 and L4	8	<u>L5</u>
<u>L4</u>	impact same styrene	392	<u>L4</u>
<u>L3</u>	acid value	474	<u>L3</u>
<u>L2</u>	L1	0	<u>L2</u>

DB=USPT; PLUR=YES; OP=ADJ

<u>L1</u>	acid value	8897	<u>L1</u>
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END OF SEARCH HISTORY

L11 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2002 ACS

AN 1984:557630 CAPLUS

DN 101:157630

TI The interaction of urea with the generic class of poly(2-hydroxyethyl methacrylate) hydrogels

AU Pinchuk, L.; Eckstein, E. C.; Van De Mark, M. R.

CS Dep. Biomed. Eng., Univ. Miami, Coral Gables, FL, 33124, USA

SO J. Biomed. Mater. Res. (1984), 18(6), 671-84

CODEN: JBMRBG; ISSN: 0021-9304

DT Journal

LA English

CC 63-7 (Pharmaceuticals)

AB Hydrogels made from pure poly(2-hydroxyethyl methacrylate) [25249-16-5] at crosslinker content >0.15 mol% do not swell above the usual equil.

values of 39-42% water content in aq. urea [57-13-6] soln. However, hydrogels contg. small (**impurity**) amts. of methacrylic acid (MAA) [79-41-4] do swell dramatically (.apprx.90%) in dil. urea

soln., but not directly due to the urea. The urea decomp. to produce ammonium ions, thus raising the pH of the soln. Ionization of MAA occurs above pH 6, causing electronics interactions within the gel. The grossly swollen state of these gels represents an internal equil. among forces due to rubber elasticity, **polymer-polymer**/solvent affinity, and electrostatic interactions.

ST polyhydroxyethyl methacrylate hydrogel interaction urea

IT 25249-16-5

RL: BIOL (Biological study)

(hydrogels of, interaction of, with urea, methacrylic acid in relation to)

IT 79-41-4, uses and miscellaneous

RL: USES (Uses)

(poly(hydroxyethyl methacrylate) hydrogels interaction with urea in relation to)

IT 57-13-6, reactions

RL: RCT (Reactant)

(poly(hydroxyethyl methacrylate) hydrogels interaction with, methacrylic acid in relation to)

FILE 'CAPLUS' ENTERED AT 10:25:15 ON 30 AUG 2002

FILE 'REGISTRY' ENTERED AT 10:26:10 ON 30 AUG 2002

L1 0 S ACRYLIC ACID AND C2H4O2/MF  
L2 6 S ACRYLIC ACID AND C3H4O2/MF  
L3 1 S 79-10-7  
L4 5 S METHACRYLIC ACID AND C4H6O2/MF  
L5 1 S 79-41-4  
L6 2 S L3 OR L5

FILE 'CAPLUS' ENTERED AT 10:29:02 ON 30 AUG 2002

L7 34057 S L6  
L8 18 S L7(5A)IMPUR?  
L9 12 S L7(5A)PPM  
L10 29 S L8 OR L9  
L11 8 S L10 AND ?POLYMER?  
L12 13 S L8 NOT L11

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<u>L21</u>	117 same L20	5	<u>L21</u>
<u>L20</u>	118 or L19	56408	<u>L20</u>
<u>L19</u>	methylmethacrylate or methylacrylate	11681	<u>L19</u>
<u>L18</u>	methyl methacrylate or methyl acrylate	50356	<u>L18</u>
<u>L17</u>	trace near4 l7	77	<u>L17</u>
<u>L16</u>	L15 not l12	61	<u>L16</u>
<u>L15</u>	l9 same l5	62	<u>L15</u>
<u>L14</u>	('5243069')[PN]	1	<u>L14</u>
<u>L13</u>	l10 and l12	16	<u>L13</u>
<u>L12</u>	('5928575'  '5976423'  '6280171'  '6171528'  '6419873'  '5989462'  '6228289'  '6022498'  '6241505'  '5243069'  '6416307'  '6368523'  '6174155'  '6328445'  '6174465'  '6200124')[PN]	16	<u>L12</u>
<u>L11</u>	l6 and L10	16	<u>L11</u>
<u>L10</u>	l8 or L9	133	<u>L10</u>
<u>L9</u>	impurity near L7	62	<u>L9</u>
<u>L8</u>	ppm near L7	72	<u>L8</u>
<u>L7</u>	acrylic acid or methacrylic acid	80083	<u>L7</u>
<u>L6</u>	l1 and l2 and l3 and l4 and L5	12194	<u>L6</u>
<u>L5</u>	acrylic or acrylate or methacrylic or methacrylate or methylmethacrylate or methylacrylate	198541	<u>L5</u>
<u>L4</u>	impact	231729	<u>L4</u>
<u>L3</u>	l1 and L2	55132	<u>L3</u>
<u>L2</u>	rubber or rubbery or elastomer or elastomeric	398912	<u>L2</u>
<u>L1</u>	styrene	121101	<u>L1</u>

END OF SEARCH HISTORY

L18 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS

AN 1992:236751 CAPLUS

DN 116:236751

TI Manufacture of ABS graft polymers with low impurities and apparatus therefor

IN Ota, Takeshi; Miyaki, Naoya; Wada, Fukuaki

PA Denki Kagaku Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L055-02

CC 37-3 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04008754	A2	19920113	JP 1990-110497	19900427 <--
	JP 2895565	B2	19990524		

AB The title polymers are prepd. by sep. manufg. (A) aq. graft polymer latexes [from arom. vinyl compds. and/or other vinyl compds. in the presence of 30-80% (based on solids) diene rubbers] and (B) aq. vinyl polymer latexes, followed by feeding A into the feeding barrel of a twin-screw extruder having a cylinder which consecutively has feeding, slit (for liq. removal), heating, vent (for gas removal), pressurizing (for continuous addn. of molten B), venting, and heating barrels. Thus, a ABS graft polymer having yield 99.6%, Izod impact strength 25 kg-cm/cm, Vicat softening temp. 99.degree., residual styrene (I) 700 ppm, acrylonitrile(II) 40 ppm was prepd. by a process as described above with continuous addn. of 64 kg/h molten I-II copolymer.

ST ABS graft polymer manuf app; vinyl polymer addn ABS prepn

IT Impact-resistant materials

(ABS graft polymers, manuf. of, app. for, with addn. of molten vinyl polymers)

IT Polymerization

(app., for ABS graft polymers, with high purity and yield, by addn. of molten vinyl polymers in extruders)

IT 9003-54-7, Acrylonitrile-styrene copolymer 9011-13-6, Maleic anhydride-styrene copolymer

RL: PROC (Process)

(addn. of, in manuf. of graft ABS in high yield, app. for)

IT 106677-58-1P, ABS graft polymer

RL: PREP (Preparation)

(prepn. of, in high yield, by addn. of molten vinyl polymers, app. for)

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17 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS

AN 2000:428053 CAPLUS

DN 133:59586

TI Impact-resistant vinyl copolymer-graft copolymer blend compositions and their manufacture

IN Yasuda, Minoru; Kishimoto, Akihiko; Sato, Hiroshi

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L055-02

ICS C08L025-12; C08L051-04

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 39

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000178405	A2	20000627	JP 1999-286548	19991007 <--
PRAI	JP 1998-285590	A	19981007		

AB In the process, (A) 10-95 parts melting vinyl copolymers prepd. by continuous bulk polymn. of vinyl monomer mixts. which may contain arom. vinyl monomers are mixed in extruders with (B) 5-90 parts graft copolymers prepd. by emulsion graft polymn., preferably of vinyl monomer mixts. which may contain arom. vinyl monomers and may be run in the presence of rubbers, and coagulation of the graft copolymers using inorg. salts or inorg. acids, wherein B contains 5-60% water on mixing with A and the water is removed while mixing. The compns. exhibit good moldability, color, and well-balanced impact resistance and rigidity. Thus, a compn. comprised 67 parts 70:30 styrene-acrylonitrile copolymer, 33 parts 50:35:15 polybutadiene-styrene-acrylonitrile graft copolymer with graft ratio 45% and water content 25%, tert-butylhydroxytoluene, and tri(nonylphenyl)phosphite. The pellet had yellowness index 22. The compn. showed Izod impact strength 250 J/m, tensile strength 40 MPa, and unreacted monomer content to the resin 780 ppm.

ST impact resistance vinyl copolymer graft copolymer blend; arom vinyl polymer compn impact resistance; rubber graft arom vinyl polymer impact resistance; acrylonitrile styrene copolymer compn impact resistance; butadiene rubber graft acrylonitrile styrene copolymer; ABS graft resin blend impact resistance

IT Impact-resistant materials  
(impact-resistant vinyl copolymer-rubber graft copolymer blend compns. and their manuf.)

IT Polymer blends  
RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(impact-resistant vinyl copolymer-rubber graft copolymer blend compns. and their manuf.)

IT 9003-54-7P, Acrylonitrile-styrene copolymer 25213-88-1P,  
Acrylonitrile-methyl methacrylate-styrene copolymer 31621-07-5P,  
Acrylonitrile-N-phenylmaleimide-styrene copolymer 106677-58-1P,  
Acrylonitrile-butadiene-styrene graft copolymer 107592-06-3P,  
Acrylonitrile-butadiene-methyl methacrylate-styrene graft copolymer  
110186-79-3P, Acrylonitrile-butadiene-N-phenylmaleimide-styrene graft  
copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); PREP (Preparation); USES (Uses)  
(impact-resistant vinyl copolymer-rubber graft copolymer blend compns. and their manuf.)

=>



L16 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS

AN 1996:520982 CAPLUS

DN 125:144241

TI Manufacture of impact-resistant resin compositions with good balance of color, impact resistance and rigidity with greatly reduced waste water treatment

IN Kishimoto, Akihiko; Goto, Eizo; Kadoi, Akira; Nakagawa, Keiji

PA Toray Industries, Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L025-12

ICS C08J003-20; C08L055-02

CC 37-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08134298	A2	19960528	JP 1994-273245	19941108 <--
	JP 3158901	B2	20010423		
	CN 1149592	A	19970514	CN 1995-120348	19951027
PRAI	JP 1994-273245	A	19941108		

AB The title process involves prepn. of rubber component-free resin by continuous bulk polymn., and adding and mixing rubber component-contg. graft copolymers to the molten resin during the last half part of the monomer removal process. Acrylonitrile and styrene were continuously bulk polymd., followed by removal of unreacted monomer with addn. of polybutadiene-based ABS resin.

ST ABS resin manuf

IT 106464-96-4P, Acrylonitrile-ethylene-ethylidenenorbornene-propylene-styrene graft copolymer 106677-58-1P, ABS graft polymer 107592-06-3P, Acrylonitrile-butadiene-methyl methacrylate-styrene graft copolymer 110186-79-3P, Acrylonitrile-butadiene-N-phenylmaleimide-styrene graft copolymer

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(manuf. of impact-resistant resin compns. with good balance of color, impact resistance and rigidity with greatly reduced waste water treatment)

=>

L15 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS

AN 1996:67522 CAPLUS

DN 124:147754

TI Bulk polymerization of aromatic vinyl monomers in presence of graft copolymers to give impact-resistant resins

IN Kishimoto, Akihiko; Goto, Eizo; Kadoi, Akira; Nakagawa, Keiji

PA Toray Industries, Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L051-04

ICS C08L025-04; C08L055-02

CC 37-3 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
				JP 1994-91879	19940428 <--
PI	JP 07292205	A2	19951107		
	JP 3109378	B2	20001113		
	JP 2001049065	A2	20010220	JP 2000-214458	19940428
PRAI	JP 1994-91879	A3	19940428		

AB The title compns. with good color and mech. properties are prepd. by adding graft copolymers prepd. by polymg. arom. vinyl monomers 10-100, vinyl cyanides 0-50, (meth)acrylic acid esters 0-80, and copolymerizable vinyl monomers 0-60% in the presence of rubbery polymers and other thermoplastic copolymers to the monomers during the continuous bulk polymn. of arom. vinyl monomers 20-100, vinyl cyanides 0-60, (meth)acrylic acid esters 0-80, and copolymerizable vinyl monomers 0-60%. A compn. was prepd. by polymg. styrene and acrylonitrile in the presence of n-octyl mercaptan and an ABS graft copolymer.

ST bulk polymn vinylarene blend impact resistance; styrene bulk polymn blend impact resistance; acrylonitrile styrene bulk polymn blend; ABS polymer addn bulk polymn vinylarene; acrylate vinylarene bulk polymn impact resistance; discoloration prevention blend vinylarene copolymer

IT Impact-resistant materials  
(blends with good color prepd. by bulk polymn. of vinylarene-contg. monomers in presence of graft copolymers)

IT Plastics, molded  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(impact-resistant blends prepd. by bulk polymn. of vinylarene-contg. monomers in presence of graft copolymers)

IT Discoloration prevention  
(in prepn. of blends by bulk polymn. of vinylarene-contg. monomer mixts. in presence of graft copolymers)

IT Polymerization  
(bulk, of vinylarene-contg. monomers in presence of graft copolymers to give impact-resistant resins)

IT 106677-58-1, Acrylonitrile-butadiene-styrene graft copolymer  
107592-06-3, Acrylonitrile-butadiene-methyl methacrylate-styrene graft copolymer  
110186-79-3, Acrylonitrile-butadiene-N-phenylmaleimide-styrene graft copolymer

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)  
(impact-resistant blends prepd. by bulk polymn. of acrylonitrile and styrene in presence of)

IT 9003-53-6P, Polystyrene 9003-54-7P, Acrylonitrile-styrene copolymer  
31621-07-5P, Acrylonitrile-N-phenylmaleimide-styrene copolymer  
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); PROC (Process); USES (Uses)  
(prepn. by bulk polymn. in presence of graft copolymers to give impact-resistant blends)

L14 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS  
AN 1993:429389 CAPLUS  
DN 119:29389  
TI Impact-resistant graft copolymer compositions  
IN Kashiwagi, Hiroki; Kanayama, Juichi  
PA Monsanto Kasei Kk, Japan  
SO Jpn. Kokai Tokkyo Koho, 8 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM C08F279-02  
ICS C08L033-20; C08L055-02  
CC 37-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05078428	A2	19930330	JP 1991-243474	19910924 <--
AB	Chem. resistant title compns. comprise (A) 15-100% graft copolymers which are prep'd. by emulsion polymn. of monomer mixts. contg. 50-90% vinyl cyanides and 10-50% vinylarenes using polymn. initiators in the presence of rubber polymer latexes having wt.-av. diam. 0.05-0.50 .mu.m and show rubber content (R, in graft copolymer) 0.10-0.60 and $50 < Gr = 100(y-xR)/xR < 130$ (Gr = grafting degree, x = amt. of graft copolymer, y = MeCN-insol. content in x) and (B) copolymers of 50-90% vinyl cyanides and 10-50% vinylarenes. Thus, 682.5 g acrylonitrile and 292.5 g styrene were emulsion polymd. in the presence of 1050 g SBR latex (50% solids, wt. av. diam. 0.15 .mu.m) at 65.degree. to give a graft copolymer (Gr 90%), 48.6 parts of which and 51.4 parts 70:3 acrylonitrile-styrene copolymer were kneaded, pelletized, and molded to give a test piece showing Izod impact strength 60 kg-cm/cm, melt flow rate 3.5 g/10 min, and good chem. resistance.				
ST	acrylonitrile styrene graft copolymer; ABS graft polymer impact strength; chem resistance acrylonitrile styrene graft polymer; fluidity				
IT	acrylonitrile styrene graft polymer				
IT	Chemically resistant materials				
IT	Impact-resistant materials				
IT	(acrylonitrile- and styrene-grafted copolymer blends)				
IT	Plastics				
IT	RL: USES (Uses)				
IT	(acrylonitrile- and styrene-grafted copolymer blends, chem. and impact-resistant)				
IT	9003-54-7P, Acrylonitrile-styrene copolymer				
IT	RL: PREP (Preparation)				
IT	(prepn. of, acrylonitrile- and styrene-grafted rubber blends, chem. and impact-resistant, with good fluidity)				
IT	106677-58-1P, Acrylonitrile-butadiene-styrene graft copolymer				
IT	108554-70-7P, Acrylonitrile-butyl acrylate-styrene graft copolymer				
IT	RL: PREP (Preparation)				
IT	(prepn. of, acrylonitrile-styrene copolymer blends, chem. and impact-resistant, with good fluidity)				

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12 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS  
 AN 1993:104432 CAPLUS  
 DN 118:104432  
 TI Molding materials with good resistance to fluorocarbon gases  
 IN Nakazawa, Kazumi; Ijuin, Noriaki; Nakamura, Jun; Furuyama, Kenju  
 PA Japan Synthetic Rubber Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08F279-02  
 ICS C08F265-06; F25D023-08  
 CC 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 37  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04258619	A2	19920914	JP 1991-40539	19910213 <--
AB	The title materials, useful in contact with thermal insulators contg. fluorocarbon blowing agents, comprise ABS resin and copolymers prepd. from a vinylarene, a vinyl cyanide, and an unsatd. amide. A mixt. of 60% ABS resin and 40% 10:45:45 acrylamide-acrylonitrile-styrene copolymer gave moldings showing 8.5% swelling during 24 h in contact with Freon 123 at 23.degree..				
ST	fluorocarbon resistance thermoplastic; blowing agent fluorocarbon resistance plastic; chlorofluorocarbon resistance thermoplastic; ABS polymer fluorocarbon resistance; acrylonitrile copolymer fluorocarbon resistance; styrene copolymer fluorocarbon resistance; acrylamide copolymer fluorocarbon resistance				
IT	Plastics, molded				
	RL: USES (Uses)				
	(ABS polymer blends, with resistance to fluorocarbon blowing agents)				
IT	Chemically resistant materials				
	(fluorocarbon-resistant, ABS polymer blends as)				
IT	Blowing agents				
	(fluorocarbons, ABS polymer blends resistant to)				
IT	Thermal insulators				
	(cellular, fluorocarbon-expanded, ABS polymer blends resistant to)				
IT	9003-54-7, Acrylonitrile-styrene copolymer 9003-56-9 28350-71-2				
	32875-84-6, Acrylamide-acrylonitrile-styrene copolymer 102068-25-7				
	106677-58-1, Acrylonitrile-butadiene-styrene graft copolymer				
	112504-34-4, Acrylamide-acrylonitrile-butadiene-styrene graft copolymer				
	118056-56-7 146082-48-6 146082-49-7				
	RL: USES (Uses)				
	(blends contg., with resistance to fluorocarbon blowing agents)				
IT	306-83-2				
	RL: USES (Uses)				
	(blowing agents, ABS polymer blends resistant to)				

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L10 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS  
AN 1992:572819 CAPLUS  
DN 117:172819  
TI Impact- and Freon 123-resistant resin compositions  
IN Nakamichi, Motonori; Shichizawa, Atsushi  
PA Asahi Chemical Industry Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L055-02

ICS C08L025-08; C08L033-10; C08L033-20

CC 37-6 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04126756	A2	19920427	JP 1990-244088	19900917 <--
AB	The title compns. comprise graft copolymers of rubbers, acrylonitrile (I), vinyl arom. compds., and optionally other unsatd. monomers and copolymers of I, methacrylate esters, and optionally vinyl arom. compds. and other unsatd. monomers at a specified monomer ratio. Prepg. a graft copolymer (II) from polybutadiene 50, I 30, and styrene 20 parts and a copolymer (III) from 50 parts I and 50 parts Me methacrylate, kneading 52 parts II and 48 parts III, and injection molding gave test pieces with good impact and Freon 123 resistance.				
ST	rubber graft blend Freon resistant; impact resistant rubber graft blend				
IT	Plastics				
	RL: USES (Uses)				
	(impact- and Freon-resistant, rubber graft copolymer and acrylonitrile copolymer blends for)				
IT	Chemically resistant materials				
	(impact-resistant, rubber graft copolymer and acrylonitrile copolymer blends for)				

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L21 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2002 ACS  
 AN 2002:104680 CAPLUS  
 DN 136:135642  
 TI Rubber-reinforced transparent resin composition and method of producing  
 the same  
 IN Kido, Ryota; Shibata, Hiroshi; Takamura, Hajime;  
 Ohmura, Akihiro; Yamamoto, Yoshiyuki  
 PA Toray Industries, Inc., Japan  
 SO Eur. Pat. Appl., 35 pp.  
 CODEN: EPXXDW

DT Patent  
 LA English  
 IC ICM C08L025-14  
 ICS C08L033-06; C08L051-04; C08L055-02  
 ICI C08L025-14, C08L055-02; C08L033-06, C08L051-04  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 39

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1178079	A1	20020206	EP 2001-117929	20010724
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002105150	A2	20020410	JP 2001-219344	20010719
CN 1335335	A	20020213	CN 2001-132542	20010725
US 2002042476	A1	20020411	US 2001-912407	20010726
PRAI JP 2000-225142	A	20000726		

AB A rubber-reinforced styrene transparent resin compn. contains a styrene copolymer reinforced with a rubber polymer, wherein the monomer compn. of an acetone sol. resin component contained in the resin compn. contains 5 to 70% by wt. of arom. vinyl monomer (a1), 30 to 95% by wt. of unsatd. carboxylic acid alkyl ester monomer (a2), 0 to 50% by wt. of vinyl cyanide monomer (a3), and 0 to 50% by wt. of another monomer copolymerizable with these monomers, and the acid value of the acetone sol. resin component is 0.01 to 1 mg KOH/g. A transparent material comprised a blend of acrylonitrile-, Me methacrylate-, and styrene-grafted butadiene rubber and Acrylonitrile-Me methacrylate-styrene copolymer.

ST rubber reinforced transparent blend

IT Butadiene rubber, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)

(acrylonitrile-, Me methacrylate-, and styrene-grafted;

rubber-reinforced transparent resin compn. and method of producing the same)

IT Impact-resistant materials

Polymerization

Transparent materials

(rubber-reinforced transparent resin compn. and method of producing the same)

IT Polymer blends

RL: PRP (Properties)

(rubber-reinforced transparent resin compn. and method of producing the same)

IT 9003-17-2P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); PREP (Preparation); USES (Uses)

(butadiene rubber, acrylonitrile-, Me methacrylate-, and

styrene-grafted; rubber-reinforced transparent resin compn. and method of producing the same)

IT 25213-88-1P, Acrylonitrile-methyl methacrylate-styrene copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)

(rubber-reinforced transparent resin compn. and method of producing the same)

IT 107592-06-3P, Acrylonitrile-butadiene-methyl methacrylate-styrene graft copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); PREP (Preparation); USES (Uses)  
(rubber-reinforced transparent resin compn. and method of producing the  
same)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

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- (2) Am Cyanamid Corp; FR 1552314 A 1969
- (3) Bayer Ag; EP 0173812 A 1986 CAPLUS
- (4) Chen, J; US 6121385 A 2000 CAPLUS
- (5) Cy Ro Ind; GB 2106120 A 1983 CAPLUS
- (6) Kanegafuchi Chemical Ind; EP 0741165 A 1996 CAPLUS
- (7) Kureha Chemical Ind Co Ltd; FR 2561248 A 1985 CAPLUS
- (8) Novacor Chem Int; EP 0613925 A 1994 CAPLUS
- (9) Rosen, I; US 4160001 A 1979 CAPLUS
- (10) Sumitomo, N; GB 2159162 A 1985 CAPLUS
- (11) Terenzi, J; US 3524536 A 1970 CAPLUS

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